

## ABSTRACT

A method for providing a plurality of service classes in a network for transporting a data packet. The managed elements in a network are partitioned into a plurality of element instances, each element instance is engineered to provide one of the service classes, and the data packet is handled by each managed element with the element instance corresponding to the service class of the data packet. The service classes that may be provided are unlimited. The method may further comprise determining the service class of the data packet, typically at the first managed element lying near the edge of the network to handle the data packet. After the first managed element to handle the data packet determines its service class and the appropriate element instance forwards the data packet the subsequent managed elements to handle the data packet need not identify its service class but simply utilize the same element instance as that utilized by the forwarding managed element. Also, a network for transporting a data packet to be afforded one of a plurality of service classes, comprises a plurality of managed network elements, each managed element partitioned into a plurality of element instances, each element instance in a given managed element engineered to provide one of the service classes, and a plurality of communication links connecting the managed elements to each other, the communication links carrying the data packet between the managed elements.